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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,191	06/20/2005	Sonja Salmon	10357,504-US	1166
25908 7590 06/17/2011 NOVOZYMES NORTH AMERICA, INC. 500 FIFTH AVENUE SUITE 1600 NEW YORK, NY 10110				
EXAMINER				
KHAN, AMINA S				
ART UNIT		PAPER NUMBER		
1764				
NOTIFICATION DATE		DELIVERY MODE		
06/17/2011		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Patents-US-NY@novozymes.com

### Office Action Summary

**Application No.**

10/540,191

**Applicant(s)**

SALMON ET AL.

**Examiner**

AMINA KHAN

**Art Unit**

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 April 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 90-105 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 90-105 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This office action is in response to applicant's amendments filed on April 6, 2011.
2. Claims 90-105 are pending and new. Claims 1-89 have been cancelled.
3. All prior rejections are withdrawn in view of applicant's cancellation of the claims.

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 90-105 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (US 2002/0007516) and further in view of Schneider et al. (US 6,165,761).

Wang teach laundry detergent composition (paragraph 0104) comprising peroxide (paragraph 0041) wherein the textiles are simultaneously de-sized, scoured and bleached at pH between about 8.5 and 10.5 (paragraphs 0011 and 0061) in a textile manufacturing process (paragraph 0111). Wang teach treating cottons and other cellulose (paragraph 0111).

Wang do not specifically teach generating peroxide using carbohydrate oxidases, the concentration of the carbohydrate oxidase and a two or three step process.

Schneider et al. teach a novel carbohydrate oxidase having the capability to oxidize maltodextrins and cellodextrins more efficiently than glucose may be obtained from a strain of *Microdochium*, particularly *M. nivale* or a fungal source (column 4, lines 15-25 and 45-55; column 5, lines 5-10, column 12, lines 55-65). Schneider et al. further teach using substrates at concentrations of 10mM or less such as maltooligosaccharides having a degree of polymerization of 2-6 specifically, glucose, xylose, maltose, maltotriose or maltotetraose (column 3, lines 50-65) at pH ranges of 4-9 (column 4, lines 35-50). Schneider et al. further teach the use of these oxidases and substrates as components of laundry detergents to produce hydrogen peroxide (column 20, lines 25-40). Schneider further teach the activity of the carbohydrate oxidases towards maltose, cellobiose, glucose, xylose, lactose (column 4, lines 15-25), galactose and mannose (column 31, lines 20-35).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the methods of Wang by incorporating the carbohydrate oxidases and substrates of Schneider because Schneider teach these components as an effective way of producing hydrogen peroxide in laundering detergents and Wang teach the addition of hydrogen peroxide to laundry detergents in textile manufacture. Regarding the concentrations of the carbohydrate oxidase and substrate, since the combination of these components is responsible for the concentration of hydrogen peroxide produced and in turn the hydrogen peroxide concentration is responsible for

the level of bleaching of the fabric, it would have been obvious that optimization of the oxidase and substrate amounts would allow production of the desired bleaching effect.

Regarding the two or three step process vs. a simultaneous process, in general, the transposition of process steps or the splitting of one step into two, where the processes are substantially identical or equivalent in terms of function, manner and result, was held to not patentably distinguish the processes, see *Ex parte Rubin*, 128 USPQ 159 (PO BdPatApp 1959). All processes would be expected to produce similar results as similar textiles are being treated with similar desizing, scouring and bleaching agents which would be expected to produce similar effects on the textile whether applied simultaneously or sequentially.

It would have been further obvious that the carbohydrate oxidases of Schneider would have activity towards arabinose and fructose and both alpha and beta glucose as the instant specification (page 30; page 37, line 11; page 39 S3-S6) shows the enzymes utilized in the instant examples showing arabinose, fructose and alpha and beta glucose activity are those of US 6,165,761, i.e. the Schneider reference.

### ***Response to Arguments***

6. Applicant's arguments regarding Wang in view of Schneider et al. are not persuasive. Schneider clearly teaches the claimed carbohydrate oxidases generated by *Microdochium nivale* CBS 100236, same as that used by applicant (page 30, lines 10,11; page 13, lines 4-7). Schneider further clearly teaches using the carbohydrate oxidase as a component of laundry detergent compositions for the generation of

peroxide (column 20, lines 30-40). Applicant argues that the claimed carbohydrate oxidase provides unexpected results over other peroxide generating enzymes. The examiner repeats arguments that applicant's declaration under 37 CFR 1.132 filed on September 27, 2010 is not commensurate in scope with the claims as it only provides unexpected data for the specific *M. nivale* carbohydrate oxidase species and not the genus of all carbohydrate oxidases claimed in claim 1.

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to AMINA KHAN whose telephone number is (571)272-5573. The examiner can normally be reached on Monday through Friday, 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Amina Khan/  
Primary Examiner, Art Unit 1764  
June 14, 2011